

- calculating a corrected focal length associated with the image pixel based on the at least two corresponding focal length variations and the measured local temperature value.
6. The method of claim 5, further comprising: calculating a focal length variation corresponding to the measured local temperature value based on linear interpolation of the selected at least two temperature values and the at least two corresponding focal length variation values.
7. The method of claim 4, further comprising: storing the temperature focal length variation table in an internal memory of the image apparatus.
8. The method of claim 7, further comprising: performing contrast autofocus of the left image of the object and the right image of the object to calculate a focal length variation corresponding to the measured local temperature value.
9. The method of claim 8, wherein storing the temperature focal length variation table includes, generating a summation image based on the left image and the right image, such that each pixel of the summation image has a pixel value that is a sum of corresponding pixel values of the left image and the right image, wherein each of the image pixels is a two-phase detector (2PD) sensor; and performing contrast autofocus of the summation image of the object.
10. The method of claim 8, further comprising: correcting one of the left image and the right image to generate a corrected image of the object, wherein each of the image pixels is a metal shield pixel sensor; and performing contrast autofocus of the corrected image.
11. The method of claim 4, further comprising: reading the temperature focal length variation table from an internal memory of the image apparatus.
12. A method, comprising: measuring a first local temperature value associated with an image apparatus based on processing sensor data generated by at least one temperature sensor; performing a first contrast autofocus of at least one image captured by the image apparatus to calculate a first autofocus step code, based at least in part upon the measured first local temperature value; measuring a second local temperature value based on processing sensor data generated by the at least one temperature sensor, the second local temperature value being different from the first local temperature value; performing a second contrast autofocus of at least one image captured by the image apparatus to calculate a second autofocus step code, based at least in part upon the measured second local temperature value; and calculating a focal length variation based on both the first autofocus step code and the second autofocus step code.
13. The method of claim 12, further comprising: determining whether the second local temperature value is greater than the first local temperature value by at least a first temperature value.
14. The method as set forth in claim 13, further comprising:
- performing the second contrast autofocus based on a determination that the second local temperature value is greater than the first local temperature value by at least the first temperature value.
15. The method as set forth in claim 12, further comprising:
- establishing an association between the focal length variation and the second local temperature value; and storing the established association between the focal length variation and the second local temperature value in a memory.
16. A method for calculating a depth of an object relative to an image apparatus, the image apparatus including an image sensor and a lens configured to direct incident light of the image sensor, the method comprising:
- capturing a plurality of images of the object at separate, respective portions of the image sensor;
- calculating a binocular disparity of the object based on the plurality of images;
- measuring a current local temperature value associated with the lens;
- performing a contrast autofocus of at least one image of the plurality of images to calculate an autofocus step code, based at least in part upon the measured current local temperature value;
- calculating a focal length variation based on both the autofocus step code and a second autofocus step code, the second autofocus step code being associated with a reference focal length of the lens, the reference focal length being associated with a reference local temperature value;
- calculating a corrected focal length of the lens based on the focal length variation; and
- calculating the depth of the object relative to the image apparatus, based on both the binocular disparity and the corrected focal length.
17. The method of claim 16, further comprising:
- generating a summation image based on the left image and the right image, such that each pixel of the summation image has a pixel value that is a sum of corresponding pixel values of the plurality of images; and
- performing the contrast autofocus of the summation image of the object to calculate the autofocus step code.
18. The method of claim 16, further comprising:
- correcting at least one image of the plurality of images to generate at least one corrected image of the object; and performing the contrast autofocus of the summation image of the object to calculate the autofocus step code.
19. The method of claim 16, further comprising:
- performing the contrast autofocus based on a determination that the current local temperature value is greater than the reference local temperature value by at least a first temperature value.
20. The method of claim 16, wherein the focal length variation corresponds to a value obtained by subtracting the autofocus step code from a reference autofocus step code, the reference autofocus step code being associated with the reference local temperature value.